

Exhibit 4

STMicroelectronics - Microprocessor Unit (MPU) Device (see Product List at end for models)	
Infringement of the '242 patent	
Claim 1	Evidence
1. A method of processing imaging signals, the method comprising:	<p>The STMicroelectronics MPU device performs a method of processing imaging signals.</p> <p>For example, the STMicroelectronics MPU device has a camera interface (e.g. that supports 8-bit to 14-bit input signals) which enables an image sensor to be coupled to the MPU device. The image sensor includes an imaging array and a clock generator. The STMicroelectronics MPU device includes an image processor. The image processor processes imaging signals that are received from the image sensor via the camera interface.</p>
receiving image data from an imaging array;	<p>The STMicroelectronics MPU device receives image data from an imaging array.</p> <p>For example, the image sensor includes an imaging array. The imaging array produces image data when exposed to an image. The camera interface of the STMicroelectronics MPU device receives the image data from the imaging array.</p>
storing the image data in a FIFO memory;	<p>The STMicroelectronics MPU device stores the image data in a FIFO memory.</p> <p>For example, the camera interface includes a FIFO memory for storing image data. The image data received from the imaging array is stored in the FIFO memory by the camera interface.</p>
updating a FIFO counter to maintain a count of the image data in the FIFO memory in response to memory reads and writes;	<p>The STMicroelectronics MPU device updates a FIFO counter to maintain a count of the image data in the FIFO memory in response to memory reads and writes;</p> <p>For example, the camera interface includes a FIFO counter to maintain a count of the image data, or "fill level", that is stored in the FIFO memory. When a unit of image data is written to the FIFO memory, the count of the FIFO counter is incremented. When a unit of image data is read from the FIFO memory, the count of the FIFO</p>

	counter is decremented.
comparing the count of the FIFO counter with a FIFO limit;	<p>The STMicroelectronics MPU device compares the count of the FIFO counter with a FIFO limit.</p> <p>For example, the camera interface includes a FIFO limit which it compares to the FIFO count to determine if the amount of image data in the FIFO memory is at a “fill level” that will require the camera interface to take an action.</p>
generating an interrupt signal to request a processor to transfer image data from the FIFO memory in response to an interrupt enable signal being valid and the count of the FIFO counter having a predetermined relationship to the FIFO limit; and	<p>The STMicroelectronics MPU device generates an interrupt signal to request a processor to transfer image data from the FIFO memory in response to an interrupt enable signal being valid and the count of the FIFO counter having a predetermined relationship to the FIFO limit.</p> <p>For example, the camera interface includes circuitry for performing operations to transmit image data to the image processor. The servicing of interrupts by the image processor can be enabled or disabled. When the servicing of interrupts from the camera interface is enabled and the count of the FIFO counter has a predetermined relationship to the FIFO limit, the camera interface generates an interrupt signal. The interrupt signal represents a request for the image processor to transfer image data from the FIFO memory.</p>
transferring image data from the FIFO memory to the processor in response to the interrupt signal.	<p>The STMicroelectronics MPU device transfers image data from the FIFO memory to the processor in response to the interrupt signal.</p> <p>For example, when the image processor receives the interrupt signal, the image processor transfers the image data from the FIFO memory to the image processor for processing.</p>

**STMicroelectronics - Microprocessor Unit (MPU) Device
(see Product List at end for models)**

Infringement of the '242 patent

Claim 8	Evidence
8. A method of	The STMicroelectronics MPU device performs a

processing imaging signals, the method comprising:	<p>method of processing imaging signals.</p> <p>For example, the STMicroelectronics MPU device has a camera interface (e.g. that supports 8-bit to 14-bit input signals) which enables an image sensor to be coupled to the MPU device. The image sensor includes an imaging array and a clock generator. The STMicroelectronics MPU device includes an image processor. The image processor processes imaging signals that are received from the image sensor via the camera interface.</p>
receiving image data from an imaging array;	<p>The STMicroelectronics MPU device receives image data from an imaging array.</p> <p>For example, the image sensor includes an imaging array. The imaging array produces image data when exposed to an image. The camera interface of the STMicroelectronics MPU device receives the image data from the imaging array.</p>
storing the image data in a FIFO memory;	<p>The STMicroelectronics MPU device stores the image data in a FIFO memory.</p> <p>For example, the camera interface includes a FIFO memory for storing image data. The image data received from the imaging array is stored in the FIFO memory by the camera interface.</p>
updating a FIFO counter to maintain a count of the image data in the FIFO memory in response to memory reads and writes;	<p>The STMicroelectronics MPU device updates a FIFO counter to maintain a count of the image data in the FIFO memory in response to memory reads and writes;</p> <p>For example, the camera interface includes a FIFO counter to maintain a count of the image data, or “fill level”, that is stored in the FIFO memory. When a unit of image data is written to the FIFO memory, the count of the FIFO counter is incremented. When a unit of image data is read from the FIFO memory, the count of the FIFO counter is decremented.</p>
comparing the count of the FIFO counter with a FIFO limit;	<p>The STMicroelectronics MPU device compares the count of the FIFO counter with a FIFO limit.</p> <p>For example, the camera interface includes a FIFO limit which it compares to the FIFO count to determine if the amount of image data in the FIFO</p>

	memory is at a “fill level” that will require the camera interface to take an action.
generating, in response to the count of the FIFO counter having a predetermined relationship to the FIFO limit, a bus request signal to request a bus arbitration unit to grant access to an output bus; and	<p>The STMicroelectronics MPU device generates, in response to the count of the FIFO counter having a predetermined relationship to the FIFO limit, a bus request signal to request a bus arbitration unit to grant access to an output bus.</p> <p>For example, the camera interface includes a bus arbitration unit and an output bus to which the image processor is connected. When the count of the FIFO counter has a predetermined relationship to the FIFO limit, the camera interface generates a bus request signal. The bus request signal represents a request for the bus arbitration unit to grant the camera interface access to the output bus.</p>
transferring image data from the FIFO memory to the output bus in response to receiving a grant signal from the bus arbitration unit.	<p>The STMicroelectronics MPU device transfers image data from the FIFO memory to the output bus in response to receiving a grant signal from the bus arbitration unit.</p> <p>For example, after the bus arbitration unit receives the bus request signal it generates a grant signal that gives the camera interface access to the output bus. Upon receiving the grant signal, the image data is transferred from the FIFO memory to the output bus for processing by the image processor.</p>

Product List

STM32MP1 Series MPUs:

STM32MP151A, STM32MP151C, STM32MP151D, STM32MP151F
STM32MP153A, STM32MP153C, STM32MP153D, STM32MP153F
STM32MP157A, STM32MP157C, STM32MP157D, STM32MP157F

References

[1] STM32MP151A

<https://www.st.com/resource/en/datasheet/stm32mp151a.pdf>

[2] STM32MP151C

<https://www.st.com/resource/en/datasheet/stm32mp151c.pdf>

[3] STM32MP151D

<https://www.st.com/resource/en/datasheet/stm32mp151d.pdf>

[4] STM32MP151F

<https://www.st.com/resource/en/datasheet/stm32mp151f.pdf>

[5] STM32MP153A

<https://www.st.com/resource/en/datasheet/stm32mp153a.pdf>

[6] STM32MP153C

<https://www.st.com/resource/en/datasheet/stm32mp153c.pdf>

[7] STM32MP153D

<https://www.st.com/resource/en/datasheet/stm32mp153d.pdf>

[8] STM32MP153F

<https://www.st.com/resource/en/datasheet/stm32mp153f.pdf>

[9] STM32MP157A

<https://www.st.com/resource/en/datasheet/stm32mp157a.pdf>

[10] STM32MP157C

<https://www.st.com/resource/en/datasheet/stm32mp157c.pdf>

[11] STM32MP157D

<https://www.st.com/resource/en/datasheet/stm32mp157d.pdf>

[12] STM32MP157F

<https://www.st.com/resource/en/datasheet/stm32mp157f.pdf>